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A study to define the in-service pedagogical needs of I.B.E.W. apprenticeship instructors

Paul James Nyerick

A STUDY TO DEFINE THE IN-SERVICE PEDAGOGICAL NEEDS OF I.B.E.W. APPRENTICESHIP INSTRUCTORS

A Thesis

Presented to the

Faculty of

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San Bernardino

In Partial Fulfillment

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in

Education: Vocational

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by

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ABSTRACT

Apprenticeship training is very important for organized labor, as well as for the perpetuation of the technical society. Organizational imperatives place great demands on apprenticeship instructors responsible for the education and maturation of perspective union workers. The study gathered quantitative information regarding perceived pedagogical training needs of apprenticeship instructors involved with the Electrical Training Trust of Los Angeles County, International Brotherhood of Electrical Workers. The instrument was developed based on information obtaineded from the Performance Based Teacher Education (PBTE) model developed by Ohio State University. The survey was sent to all electrical apprenticeship instructors (N=66). A principle component analysis was performed on the broad survey data gathered to isolate perceived training needs. The predominant factors obtained from the principle component analysis were used to model the influence of factors employed in the multiple regression analysis. Data included that union apprenticeship instructors needed pedagogical competencies in 6 categories that included 14 specific competencies.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Background

Gray (1990) believed that "teaching is such an integral part of learning that formal education probably could not continue to exist without it. Because teaching is so important to the learning process, it is vital that we ensure teaching excellence in vocational education on a daily basis" (p.80).

Because the American public believed that improvement in teaching is the key to educational enhancement (Hammond, Wise, & Pease, 1983), teaching has become the target of current education reform. Many vocational administrators believed that educational improvement has to do with refinement of occupational abilities and not the renewal of fundamental pedagogical skills.

Furthermore, the organized labor movement in the U.S.has continuously looked for ways to expand its relationship with Vocational Education. In 1962, the International Brotherhood of Electrical Workers (IBEW) and the office of the U.S. Office of Education announced a joint training agreement to improve training in the electrical trade (AVA, 1962).

Prior to this agreement, the U.S. Office of Education had appointed a panel of consultants on Vocational Education

to conduct a national study of the field, which labor had wanted for many years. During the same year that the IBEW announced its joint agreement, the AFL-CIO Committee on Education presented its views to the panel in a paper called The Changing Needs of vocational education (AFL-CIO, 1962).

This document reviewed labor's support for Vocational Education over the years. It also identified some problems that needed to solve on the next decades. These problems included better training for entry-level jobs in a rapidly changing economy, teaching new skills to workers whose jobs were eliminated due to technological innovation, keeping up with technical progress, and improving training for teachers. The AFL-CIO committee report on Education (1962), prophetically stated that "today training is never finished. To remain employed a worker must train all his working life to keep up and to anticipate the technological changes of his occupation" (pp. 1-4). Unfortunately, these goals have not been fully fulfilled.

Today, we need to retool and retrain the U.S. workforce, in order to bring America back to its former greatness as an industrial leader. This will require a new level of collaboration between industry, labor, government, and especially education. Labor has a long-standing commitment and record of cooperation and collaboration with education and training. As Edwards (1983), director of the

Skills Improvement Department, International Brotherhood of Electrical Workers, stated in a presentation at the National Center, "Organized labor is ready and willing to cooperate with Vocational Education (p. 9)".

The desire for better education, especially when it deals with the field of teacher training, definitely exists. How do educators upgrade the pedagogical competencies of these union workers entrusted in training new apprentices?

Questions can be raised which ask whether today's education reform recommendations suggest anything different from those in the past. Liberman (1987) reminded educators of the old adage, "the more things change, the more they stay the same" (p. 90). Rogers (1983) stressed that change in social institutions is a different and complex problem which usually takes a long time to accomplish, especially when it deals with organized labor and the education of apprenticeship instructors.

Tyler (1987) stressed the importance of educators becoming involved in teacher education reforms, when he stated that:

> From my experience with education reforms in the U.S. and elsewhere, I have concluded the effectiveness of education can be improved and that the public call for education reform is a stimulus for improvement. However, the leadership of the reform movement cannot

be left in the hands of individuals who have little understanding of schools, of teachers, of parents, and the students (p. 280).

The area of greatest impact for state teacher preparation institutions and research universities will come from state-level reform initiatives in the form of teacher education redesign mandates and teacher certification changes. Prospective change gets its roots from the teacher reform movement. It appeared that states adopted reform recommendations without considering the impacts on part time vocational teachers, such as apprentice teachers (Dugger & LaPorte, 1988; Householder, 1988).

Currently, there is a movement to abolish part-time designated subject teaching credentials in California (Ciauri, 1993). This could prove to be detrimental to all part-time vocational education teachers, especially to apprentice teachers who are just starting in the credential process.

The National Occupational Coordinating Committee (1982) identified the level of skill needed for vocational education in terms of reasoning, mathematics, and language skills. As early as 1960, the United States Department of Health, Education, and Welfare identified 107 competencies which were evaluated by 862 respondents (Walsh, 1960).

As a result of this and other research, the National

Center for Research in Vocational Education, Ohio State University, developed a Performance Based Teacher Education (PBTE) system based on 100 modules (later increased to 132 modules) with over 500 pedagogical competencies delineated (Duenk, 1990).

Nature of Problem

The vast majority of non-baccalaureate vocational education teachers and apprenticeship teachers, have always been from the trade and industrial education area (Strong & Schaefer 1980). Dunek (1990) stated that "skilled craftspersons and technicians can generally gain higher salaries in industry, even without a college degree, hence education is not a competitive employment market" (p. 37).

> Rice, Spetz, Hughes, Drewes, & Nerden (1982) agreed: only you can create the learning environment, provide the learning resources, and guide the apprentice through the subject matter. In order to perform these duties successfully, you must utilize teaching or pedagogical skills such as those involved with presenting information, developing instructional activities, planning instruction, and managing learning activity (p. 7).

Therefore, even though most apprenticeship instructors

do not possess a college degree in education, it is necessary to have a working knowledge of pedagogical competencies.

Significance of Problem

Clerc (1982) suggested that apprenticeship teacher training can play a role which brings about a real, profound, and lasting improvement in working conditions and environment. This training should aid in the determination of what goals the learning activities should achieve. Daly (1976) suggested that:

> a widely practiced tradition of determining training needs of work groups is to consult with the individuals targeted for training. While these individuals possess a sense of what they need in the immediate situation, they often lack the holistic of global perspective of more experienced peers (p. 22-1).

Regardless of the disadvantages of soliciting input into the content of perspective instruction, the effect of asking the individual often has a positive effect. These individuals may be the best source of information concerning their own weaknesses and may provide a reliable picture of their own level of motivation to correct or improve performance (Cascio, 1986). Therefore, organizations tended to provide training to those who are most likely to benefit

from it, meaning those who are motivated to improve.

Statement of Problem

Apprenticeship instructors of the International Brotherhood of Electrical Workers (I.B.E.W.) have committed to upgrading their pedagogical skills. They began the implementation of this goal by initiating Performance Based Teacher Education (PBTE) competencies during the summer of 1992. Though this process has initiated, a great deal work remains to accomplish closure.

Therefore, the most relevant problem for the I.B.E.W. apprenticeship instructors was to prioritize the remaining competencies in the order of importance. A plan must be developed to implement competencies in a manner that allows for recognition of competencies included in previous instruction, with a systematic deployment of the remainder.

Purpose of Study

The purpose of this study was to identify pedagogical competencies needed by I.B.E.W. apprenticeship instructors, who were responsible for training union apprentices. These instructors have completed an initial one week workshop at California State University, San Bernardino, July, 1992. Competencies were part of Performance Based Teacher Education (PBTE) system developed by Ohio State University.

Data from this study will aid in selecting competencies needed for future I.B.E.W. training institutes.

Research Questions Guiding the Study

The basic research question under investigation in this study provided evidence to what pedagogical competencies are needed by I.B.E.W. apprenticeship instructors. Also inquiries into pedagogical competencies most needed and least needed by I.B.E.W. apprenticeship instructors will be investigated.

Limitations

There was a dearth of educational research related to pedagogical competencies needed by union apprenticeship instructors. Therefore, theories that have been adapted for this group were models developed by: Rice, et al., (1982); and Dunek (1990)

The sample population was limited to apprentice teachers from the I.B.E.W. Electrical Training Trust of Los Angeles County. While the population was small, it was representative of I.B.E.W. apprenticeship instructors in California.

Definitions

American Federation of Labor (AFL): A United States labor union established in 1881 (Shields, 1986, p. 1).

American Federation of Labor - Congress of Industrial Organizations (AFL-CIO): A United States labor union established in 1963, where the AFL and CIO merged into the most powerful organized labor organization in America.

Apprenticeship: "The unique voluntary training system through individuals acquire trade and craft skills and knowledge. Training combines daily on-the-job instruction in manipulative skills with periodic classroom instruction in technical subjects related to work requirements" (Rice, Spetz, Hughes, Drewes, & Nerden, 1982, p. 1).

International Brotherhood of Electrical Workers (I.B.E.W.): An American labor union, affiliated with the AFL-CIO, that is responsible to train all of it's members with apprenticeship, journeymen, and supervisors in electrical training.

Electrical Training Trust: a state-of-the-art training facility for apprentices and journeymen electricians that is sponsored by the International Brotherhood of Electrical

Workers (IBEW) Local Union 11 and the National Electrical Contractors Association NECA), Los Angeles County Chapter. The Trust- provides the highest quality of electrical training available in the building industry. Programs include an intensive four-year apprenticeship program for men and women training to be union electricians, as well as continuing education classes to keep supervision and electrical workers abreast of new technologies and the advancements of the industry (Personal communication with Martin Hunt, Director).

Pedagogical competencies: "The non-technical skills needed to teach apprentices, such as those involved with presenting information, developing instructional activities, planning instruction, and managing learning activity" (Rice, Spetz, Hughes, Drewes, & Nerden, 1982, p. 7).

Performance Based Teacher Education (PBTE) Modules: 14 Categories including 128 competencies that have been developed, field tested, and revised by the National Center for Research in Vocational Education. Each module addresses one or more competencies identified, through research conducted by the Center, as important to secondary and postsecondary vocational teachers and other occupational trainers" (American Association for Vocational Instructional

Materials, 1989).

Vocational Education: "organized education programs which are directly related to the preparation of individuals for paid or unpaid employment or an additional preparation for a career requiring other than a baccalaureate or advanced degree" (Vocational Education Section, Title II, of the Education Amendments of 1976, p.c. 94-482). Vocational education includes any education that prepares students for employment.

CHAPTER II

LITERATURE REVIEW

Organized Labor's Historical Linkage with Vocational Education

The American labor movement has always been a champion of better schools. Unions and workers' parties in the early 19th century were determined that the promise of American democracy should be fulfilled in terms of equality of opportunity and the uprooting of class privileges. One of the deepest of these convictions among early unionists was that the responsibilities of a democratic society make it imperative that all be educated (Shields, 1986).

The Workingman's party, organized in N.Y. city in 1828, included as one of its principal planks a demand for a school system "that shall unite under the same roof the children of the poor man and the rich, the widow's charge and the orphan, where the road to distinction shall be superior industry, virtue and acquirement without reference to decent" (American Federation of labor-Congress of Industrial Organizations, 1986, pp. 1-2).

For more than a century and a half, organized labor's relationship to education, including vocational education, has been one of wholehearted support and encouragement. The labor movement in the United States has never slackened in

its close attention to educational problems. From it's founding in 1881 the American Federation of Labor (AFL) adopted resolutions calling for compulsory education laws as well as against child labor. AFL president Samuel Gompers in 1834 related "The damnable system which permits young and innocent children to have their lives worked out of them in factories, mills, workshops, and stores, is one of the very worst of labor's grievances" (American Federation of Labor-Congress of Industrial Organizations, 1986, pp 3-4). Unions to this day are still working on this problem, especially in heavy populations of immigrants.

Some of the early unions such as the Bricklayers, Pressmen, and Typographers established their own vocational schools by the late 19th century. The success of these early efforts encouraged interests in industrial education throughout the labor movement.

By the early 1900s, the AFL was reporting to the AFL convention on the status of Vocational Education.

The 1907 AFL convention, for example, recognized the formation of the National Society for the Promotion of Industrial Education. The AFL strongly supported this organization and endorsed its objective of "raising the standard of industrial education and the teaching of higher techniques of our various industries" (Gompers, 1914). Golden (1909), president of the United Textile Workers of

America, commented on the proposed program by the National Society, stated that "in such a movement I feel safe in saying organized labor is with you heart and soul".

The regular AFL Committee on Education reports during the formative years of the Vocational Education movement helped shape the final language of the Smith-Hughes Act of 1917. The AFL favored the establishment of Voc. Ed. in the public schools because such a program was a "public necessity" that should be conducted at "public expense" (Industrial Education, Report of Committee of Industrial Education, AFL, 1912, The Attitude of the Federation, p.3).

Gompers (1912) concluded that such a program should include competently trained teachers and a curriculum having instruction in English, mathematics, physics, chemistry, drawing, history of the trade, economics and the philosophy of collective bargaining.

Following the passage of the Smith-Hughes Act, all affiliates of the AFL were urged to support state efforts to develop vocational education. Affiliates were also urged to prevent any attempt to use vocational education for the purpose of exploitation. Vocational education supported by the Smith-Hughes Act was regarded by labor as preapprentice training. For the AFL, the new law helped to secure a broader base for the superior craftsman, and labor encouraged workers to take advantage (Holder, 1918).

From the beginning, organized labor saw the new vocational education program as much more than a way to teach workers how to be more efficient. Woll (1923), president of the Photoengravers union, informed vocational educators that "we want education to continue to establish a mind that is creative which will find expression in every relation in life... vocational education should make the whole work process educational in character" (p. 93). This efficiency would only happen with the cooperation of labor, management, and education.

Organized labor strongly advocated the use of training and retraining in hopes that vocational educational could make a contribution toward relieving unemployment. Once again labor called for a cooperative effort among all parties involved in vocational education. Woll (1932) speaking to the American Vocational Association, called for a joint effort "permitting the experience of industries, labor, and executives to enrich and direct the course" (p. 16) of vocational education.

Though many unions developed apprenticeship programs in the 19th century, the first national apprenticeship program was not established until the passage of the Fitzgerald Act of 1937. In 1939, the labor movement and the U.S. Office of Education jointly promoted International Labor Organization's recommendations for apprenticeship programs.

These recommendations included the following: (a) written definitions of apprenticeship, (b) specific periods of time for apprenticeship in each trade, (c) wages to be paid during an apprenticeship, (d) provision for related instruction, and (e) joint employer-employee committee approval (Beyer,1940).

Labor strongly supported apprenticeship programs that included cooperative relationships between the schools, employers, unions, and manufacturers. The courses were expected to be up-to-date and the instructors were to be experts in their trade.

In addition, union involvement in apprenticeship programs led to labor support for journeymen retraining courses such as were developed at the Washburne Trade School in Chicago (Frankland, 1940).

The AFL issued a Guide for Vocational Education (1938), was distributed to labor and education groups throughout the United States. The guide described a general rationale for vocational education and its importance to youth, the economy, and the welfare of the nation. It also was critical of proposals to compromise quality in vocational education programs and to produce large numbers of low-skilled workers. The final part of the report renewed the call to affiliates to get involved in vocational education programs at a local level. The success of vocational

education was seen as a joint responsibility, with the support of trade and industrial education by labor as an essential part of that joint responsibility.

Labor's call for organized input into vocational education programming through participation in advisory committees has been continuous and persistent. There have been problems, however, in implementing this policy because it did not always measure up to labor's expectations. The AFL frequently called on its affiliates to participate in local advisory committees. An agreement between the AFL and the U.S. Office of Education in 1942 called for vocational education programs to be established on the basis of actual need and only on the advice and counsel of a representative advisory committee, labor did not always participate. The AFL stressed in its reports labors responsibilities and obligations to sometimes disappointing participation in its affiliates in these advisory committees (AFL Reports of the Executive Council, 1939, p.10).

Despite such disappointments, the AFL reaffirmed its faith in vocational education at nearly all of its conventions. It also continued to call for the highest standards for lifetime learning. At the 1949 convention, the AFL approved an Executive Council report (1949) that stated, in part, the following:

> Vocational training, formal and informal, must establish standards of work proficiency as well as equip the worker for his work. Education must be continuous. Adult education is as essential in our complex society as is elementary education or any other level of education (p. 178).

Where purposeful joint advisory committees of management and unions were at work, the AFL believed that Vocational Education programs achieved their greatest success. If the labor movement actively participated in an advisory capacity, then, the AFL firmly believed, real value came to Vocational Education programs.

Such involvement also led to the AFL calling attention to a "caste system" in the nations schools. AFL condemned situations where low IQ students were told to take Vocational Education classes whereas high IQ students were told not to enroll in such classes. AFL also criticized vocational schools and academic schools with different scholastic standings and the "dumping" of students with social behavior problems in vocational education problems, (Green, 1951).

In 1954, the American Vocational Association (AVA), recognizing the value of improving linkage with other organizations in order to solve problems that were becoming widespread within the vocational education system, created a

Labor-Management Relations Committee. Representatives from the AFL, the National Associations of Manufacturers, the U.S. Chamber of Commerce, and the U.S. Department of Education and Labor met with the AVA's Labor Relations Committee. Membership for the committee was selected from states with good relationships with both management and labor. The creation of AVA's Labor-Management Relationship Committee was still another indication of the dependence of vocational education upon its relationships with labor and management, (AVA, Minutes of the Executive Committee, March 31, 1954).

When The Vocational Education Act of 1963 was passed, the AFL-CIO convention delegates approved of the shift emphasis "away from outdated job skills into teaching of new, modern, up-to-date skills needed in the rapidly changing American economy" (AFL Convention, December 1965, p.190).

By 1968, however, the AFL-CIO Executive Council agreed with the conclusion of the National Advisory Council on Vocational Education that "the promise of the act has not been realized" (Statement by the AFL-CIO Executive Council on Education, Feb. 20, 1968). The Executive Council urged increased funding of Vocational Education programs.

The Vocational Education Amendments of 1968, passed later that year, provided funds for the disadvantaged,

consumer education for the poor, innovative programs, new curricula testing, and new testing methods. More meaningful, responsibilities were given to the national and state advisory councils. The AFL-CIO hailed the legislation as a "landmark in the history of vocational legislation" (Statement by the AFL-CIO Executive Council on Vocational Education, Feb. 18, 1969)." But the AFL-CIO also expressed deep concern over then-President Richard M. Nixon's withholding of funds authorized by the 1968 amendments. In response to these proposed cutbacks, the AFL-CIO and other educational organizations formed a coalition group in 1969 called the Committee for Full Funding of Education Programs. The committee, known as the Committee for Education Funding, was made up of over 80 organizations concerned with federal funding. During the Nixon administration, the committee was instrumental in lobbying congress to override Nixon's veto of funds for education (Young, 1982).

Through the Nixon and Ford administrations, the AFL-CIO vigorously fought attempts to eliminate categorical funding and to lump vocational education funds into block grants that would have provided significantly reduced funding. When President Ford vetoed the Education Appropriation Bill, The AFL-CIO publicly called for the veto to be overridden. The Executive Council stated that "AFL-CIO, its members and

their families have a vital stake in education. The future development of this nation's human resources is under attack by an Administration that has no faith in American strength" (Statement by the AFL-CIO Executive Council on Overriding the Education Veto, July 30, 1975).

With the passage of the Education Amendments of 1976 (supported by the AFL-CIO), and the beginning of the Carter administration, the AFL-CIO assessed the result of the struggle for adequate educational funding during the Nixon-Ford years. Organized labor urged President Carter to address the needs of vocational education students working on out-of-date equipment, the "tracking" of such students, and the inadequate funding for vocational programs (AFL-CIO Convention report, 1975, pp. 167-168).

The AFL-CIO urged appropriations at the fully authorized level and full implementation of language concerning the roll of advisory committees. Throughout the Carter's term, the AFL-CIO continued to lobby for increased federal funding for vocational education "in order for the nation to build on the solid foundation created by The Vocational Education Act of 1963" (AFL-CIO Report of Executive Council on Education, July 3, 1975, p. 168). The AFL-CIO has steadily called for a substantive leadership program on the federal level to enable the nation's public education system to educate and re-train America's current

and future workforce. Organized labor has strongly supported efforts to reauthorize the vocational education Act at higher appropriation levels in order to provide better education and training related to job opportunities. Furthermore, Congress was asked to provide the means to enable Vocational Education to train students to use high-tech equipment; to provide new incentives for the retraining of adults; to provide support for the training, retention, and upgrading of teachers; and to continue and strengthen the requirements for labor representation on local advisory councils (AFL-CIO, Statement of the Executive Council, February 28, 1983). This was somewhat difficult because the Reagan-Bush administrations had determined that the legislation presently on the books did not include or mean to have representatives of organized labor on the National Advisory Council for Vocational Education. Those members of organized labor who served on that council and who served on the Career Education Council were rather summarily removed in the early 1980's.

The AFL-CIO has vigorously fought against the recently proposed vocational education funding cutbacks and has reaffirmed its historic concern with the development of the vocational education system. In response to President Reagan's proposed first budget, the delegates to the AFL-CIO convention meeting (November 1981) called on Congress to do

the following:

> Address the particular needs of minority and inner-city youngsters for equal access to vocational education Institutions: Consider the resources needed for guidance counseling, teacher preparation, and research; Appropriate and authorize adequate funding levels for the purchase of new equipment and program upgrading due to technological changes; address the question of sex equity in all vocational education programs; and maintain the federal leadership role by rejecting block grant proposals". They concluded with: "We ask that the same resources that are allotted to college-bound students be allocated to those students in the Vocational Education system. For too long this system has been considered inferior to the general education offerings. We to believe that a system that offers a quality program of basic education and general skills will make a significant contribution to alleviate unemployment (pp.154-155).

Many of these considerations have been high on labor's agenda from its origins in the early 19th century right up to the current emphasis on educational reform. A statement of the AFL-CIO before the Elementary Education Subcommittee of the House Education and Labor Committee on Vocational Education, 98th Congress (1983) argued that:

> The spate of recent education reform reports, most notably A Nation at Risk: The Imperative for Education Reform, have repeated many of labor's concerns about public schools. Labor supports more rigorous academic standards that have been recommended by these reports; however, labor is also concerned that raised academic requirements not have the unintended consequences of making it impossible for vocational education students also to get the education and training they need (p. 1).

The AFL-CIO Executive Council, reported to the delegates of the (1983) convention,that they urged Congress to insure that "Vocational Education at all levels should be held to the highest possible standards in both the practical and academic education offered to their students" (pp.155-156).

The National Academy of Sciences report Education for Tomorrow's Jobs (1983) noted another of labor's historic concerns about the access and equity in Vocational Education:

> If public schools are to accomplish the goals of providing up-to-date and effective vocational education for all students who want it, they should have sufficient resources not only to maintain the good programs they have now but also to modify existing

> programs and initiate new ones to teach the skills required by employers. They will also need additional money to provide remediation for disadvantaged students (p. 79).

Education of Tomorrow's Jobs (1983) also noted the lower status of vocational education as compared with academic education, especially on the high school level. It urged more collaborative efforts involving business and labor.

Historically, the AFL-CIO has urged that vocational education students receive a comprehensive education with emphasis on basic skills rather than a program that is too job specific. Broad education with transferable skills and preparation for continual learning has been labor's prescription for learning.

One of the reform reports, High Schools and the Changing Workplace (1984), has reinforced labor's position. This report recommended that the graduates of American high schools need to be adaptable to change in the workplace more than they need any particular job skills.

> Core competencies are the most important skills high school students should master. These skills include: the ability to read, write, reason, and compute;an understanding of the American social and economic life; a knowledge of the basic principles of the physical and

biological sciences; experience with cooperation and conflict resolution in groups; and possession of attitudes and personal habits that make for dependable, responsible, adaptable, and informed citizens (pp.20-27).

Labor also submitted its own recommendations on this subject. The AFL-CIO reported to the 98th Congress (1983) The course of instruction in such a high school should be English, mathematics, physics, chemistry, elementary mechanics, and drawing, the shop instruction for trades, and for each trade represented, the drawing, math, mechanical, physical, and biological science applicable to the trade, the history of the trade, and a sound system of economics, including and emphasizing the philosophy of collective bargaining.

It makes a fascinating comparison to look at this recent of recommendations for high school students alongside of the AFL prescription for quality vocational education programs drafted in 1909. An issue directly referred to in the statement to the National Academy (1984) concerns collective bargaining and conflict resolution in groups. "We believe that all students should have knowledge of the contributions of workers, the history of organized labor, and the development of one of the most successful systems anywhere of group conflict resolution, known as collective

bargaining" (National Academy of Science, 1984, p.20). Despite the clear and pressing need for vocational education students to learn about collective bargaining and the contributions of unions, the actual classroom experience of such students can be described as one in which transmission to them of such vital knowledge is more the exception than the rule. Meeany, (1983) as president of the AFL-CIO, he made this statement speaking to the membership of the AFL-CIO, "Organized labor is a part of the very fabric of our society and it ought to be an important part of any serious attempt to understand that society. In most schools today, this has not happened" (p. 1).

(Scoggins, 1967) concurred with Meany on this subject. After making an in-depth investigation of social studies textbooks, Concluded, "The evidence of an antilabor bias is abundant". Goldfinger, (1973) as director of the AFL-CIO Department of research, at a conference on labor and the schools, reported that, "such textbooks treatment of labor unions, collective bargaining, and the world of work has improved very little, if at all, since Scoggins presented his report. It is usually absent or utterly biased" (p.1).

(Shields, 1986) commented that, in 1982, a Rutger's graduate student completed his thesis that essentially says the same thing. People from the American Federation of Teachers have worked on this continually, with an informed

bias, and have come to the same conclusions. Organized labor are either not mentioned, or when mentioned, done so in a rather biased way. This distorted view of our economy and of American society in the schools is aggravated by the flood of materials sent to teachers. Leading corporations and other management-orientated organizations, such as the U.S. Chamber of Commerce and the National Association of Manufacturers, lean on the virtues of free enterprise, which treats labor either in a negative manner or not at all.

When vocational education programs have developed materials about labor, they are usually breaking new ground. Two examples of materials can be found in Maine and New York City. They both provided information and activities to make students think, but not to make students think in a certain way. The Bureau of education (1978) believed that there was a conscious effort to balance the labor and management perspectives and to provide varying opportunities to explain and express the point of view of business, the employer, and management, as well as dissent on labor union and labor issues. All points of views must be studied.

The Bureau of Labor Education (1978) had also developed Recognition: A source Book on Labor for Teachers and Students. On the title page of this booklet is the an opening position statement that reads in part,
this second edition represents a continuing attempt to

secure "recognition" for organized labor in the learning process conducted by Maine's public schools. For too long the efforts and contributions of labor in seeking and securing economic and social justice for all Americans has been ignored or dealt with unfairly. "Recognition", is a small, but necessary step in obtaining for labor the credit and perspective it so richly deserves (O'Leary, Murphy, and Hanson, 1978).

Open Doors (1978), an organization sponsored by the Economic Development Council and the New York City Board of Education, used classroom teachers to develop a resource book called Labor Unions: Getting it Together. This resource book introduced the study of labor unions and helped explain "Why" of the labor movement. It descried collective bargaining, in terms of both law and practice, and it included case studies of actual unions, their history, membership services, the struggle for political and civil rights, and much more.

Another of Open Door's (1978) classroom materials was called What's it Like to Work in New York City? One chapter, "What's it Like to Work at a Union?" describes the structure of the labor movement in New York City. It also provided a more detailed look at one local union, its work, its employees, the work atmosphere, and described some of the staff.

These examples, however, were exceptions to the rule. They were more the potential than the reality. They pointed to the critical need for significantly stronger collaboration between organized labor and Vocational Education. This is why it is important to know more about the American labor movement, because the more one knows about organized labor, the better one understands American society. The origins, growth, and development of unions are vital to the American process (Davis, 1984).

Jack Reihl, secretary-treasurer of Wisconsin State AFL-CIO and former member of the National Advisory Council on Vocational Education, raised questions about the current call for "partnerships" involving the private sector and the schools. Reihl (1984) warned that:

> if private industry avoids working closely with organized labor and attempts to shape Vocational Education around a narrow and self-serving agenda, then collaboration will have a hollow meaning. Increasingly, working people are asking questions about the quality of life, the nature of work, the impact of technology, and what the future holds. True collaboration-a partnership of several equals-will go a long way toward answering these vital questions" (p. 9).

Certainly, few groups in our society have more of a vital interest in Vocational Education than do America's

labor unions. Organized labor has been among the most active supporters of Vocational Education through strong lobbying for both federal and state funds (Shields, 1986).

The Impact of Education Reform on Preservice Teacher Education

To take advantage of the potential for improving the quality of American vocational education and to decrease the likelihood of the reform efforts actually hindering the improvement of educational quality, it is imperative that educators become actively involved in the teacher education reform movement (Tyler, 1987).

A cursory review of the major education reports revealed that vocational education in general, and apprenticeship education specifically, have not been addressed in the reform movement. With the exception of The Unfinished Agenda, industrial education has not even mentioned in reform documents (National Commission on Secondary Vocational Education, 1984).

McMurry (1988) attempted to answer the question concerning the impact the reform movement has had on the technology teacher. He surveyed industrial education department heads at midwestern universities to determine what effects the recommendations of the Holmes Group (1986) would have on their programs. McMurry's findings indicated

that department heads from both Holmes Group universities and non-Holmes group universities have observed little impact from the education reform movement.

Johnson, Erekson, Dugger, & Blankenbaker (1990) agreed:

> although it appears that the education reform, as a whole, has a limited effect on technology teacher education to date, teacher education reform has the potential to change technology teacher education a great deal in the future. The changes likely to occur at the preservice level can be categorized as : (a) impacts on programs, (b) impacts on faculty, and (c) impacts on students (p. 31).

The elimination of undergraduate degree programs in education was considered one of the most radical and controversial recommendations of the teacher education reform. The rationale for eliminating these programs was often related to depth of knowledge of subject matter. The Holmes group report (1986) stated that "teacher education long has been intellectually weak" (p. 6) and emphasized that "no teacher should be allowed to teach subjects that they have not studied deeply" (p.15).

Some state legislators have already mandated the Holmes Group (1986) recommendation to eliminate the baccalaureate degree in education. Dugger and LaPorte (1988) reported that Virginia has legislatively mandated the elimination of

all bachelor's degrees in education. However technology education, trade and industrial education, agriculture education, marketing education, home economics education, and business education programs in Virginia were granted an exemption because there was no degree program outside of education in the universities to effectively prepare teachers of these subjects. Texas has also mandated these reforms (Householder, 1988).

Only 4 of the 233 industrial teacher education programs listed in the Industrial Education Directory (Dennis, 1988) were housed in arts and science institutions. Because of the hands on approach of vocational education, there was little support for this reform.

Eliminating the undergraduate degree in education created a difficult situation for technology teacher education, especially for the programs in schools of education. Guthrie and Clifford (1989) suggested that joint appointments were problematic in many ways, in effect, a dysfunctional strategy for teacher education reform. However, the impact of this varied, depending on the type of institution.

There is little doubt that changes needed to be made in the field of teacher preparation. Current research on learning and instruction has provided an increase in our understanding of how people learn and how they should be

taught. Research has also examined the differences between effective and ineffective instructors and has provided an increased understanding of the pedagogical skills and characteristics that lead to effective instruction. Camp (1988) suggested that changes in current clinical experiences that are presently in practice must be changed. However, while the recommended changes may have a positive effect on new students who enter the program, the admissions, certification, and financial implications must be examined to see if these changes would be equitable.

Industrial teacher educators saw the increase in admission requirements as the biggest impact on students (McMurry, 1988). McMurry's survey of industrial teacher education department heads identified more than 11 potential impacts . Of these five had substantial impact, and four of the five dealt with admissions. Fields (1988) reported though, that Grambling State University in Louisiana has instituted reforms that have significantly improved the quality of teacher education graduates as measured by the percentage graduates passing the Louisiana state teachers exam.In 1988 the passing rate was almost 100%, while in the 1970's only 10% passed the test. The dramatic change was because of higher admission standards recommended by the reform movements. Because of the changes, there were fewer education students enrolled in the program, and subsequently

only motivated students finished. Higher admission standards only prevented craftsman apprentice teachers from getting a degree or even hindering the certification of these teachers.

While the increased financial burden affected all students entering research preparation programs, it had greater impact on those who come from lower economic levels of society or people who work full-time and must sacrifice high-paying wages to pursue their education. This impact resulted in a decrease in the number of minorities and working people who enrolled in teacher education and led to a profession composed primarily of middle to upper income full-time students (Apple, 1987). Ironically, this future impact was in direct contrast to the goals of both the Holmes Group (1986) and the Carnegie Forum (1986).

In addition to increases in admission requirements and the financial impacts, certain types of certification requirement for teachers resulted. The main focus of the Carnegie Forum (1986) was the creation of a National Board of Professional Teaching Standards. The National Standards Board was charged with the task of developing and administrating a set of tests to assess teacher's subject matter and pedagogical knowledge and their ability to apply knowledge in classroom situations.

While the true impact of a set of national standards for teacher certification cannot be determined until it is implemented, many questions must be asked beforehand. The National Board certification route was an attempt to improve the quality of education "after the fact." The emphasis was on preventing unqualified teachers from entering the field. The "quality control" approach cannot be the only solution. It is not clear how to be effective without improving the quality of education prior to taking a National Certification test. Sedlak (1987) stated "we cannot pretend raising the credential standards for teachers is the same as improving teaching" (p.14).

Pedagogical Competencies Through Related Subjects Instruction

Dawe (1984) stated that "teaching should be thought of not as a science but as a performing art. Teachers should learn their craft through classroom apprenticeships in teaching studios/schools under the supervision of master teachers coupled with the study of pedagogical theory" (p. 548).

For the journeyman to be an effective trainer, he or she must not only know their trade skill, but also they must use teaching skills appropriate for conveying that information to apprentices (Rice,et al,1982). Rice, et al

(1982) believed that:

> only can the apprentice teacher create the learning environment, provide the learning resources, and guide the apprentice through the subject matter. In order to perform these duties successfully, the apprentice teacher must utilize teaching or pedagogical skills such as those involved with presenting information, developing instructional activities, planning instruction, and managing learning activities" (p. 7).

Planning the Apprenticeship Program

Drews (1982) suggested that "planning the apprenticeship program is important because it provides a blueprint for building a sound program. Like any other blueprint, planning for an apprenticeship program requires that serious consideration be given the purpose to be achieved and the methods and procedures to be used in achieving these purposes" (p. 1).

The competencies involved in planning included: (1) Conducting a needs assessment and occupational analyses to determine the need for, support for, and general content for the program; (2) Establishing the goals and objectives for the program; and (3) Incorporating ideas that upgrade the program to keep up with current technology and new training ideas (Drews, 1982).

Planning Related Subjects Instruction

Rice (1982) related that:

> the planning of instruction is one of your major responsibilities as a related subjects apprentice teacher. The outcomes of the training experience depend in large measure on the care and thoroughness that you as a teacher exercise in making decisions in preparation to teach. The preparations include decisions about content to be taught, topical emphasis on content, degree of expected skill/knowledge acquisition,time use, topic sequence, type of instructional material, and type of presentation to be made (p. 1).

Of these competencies, the most important were to: (1) Identify specific knowledge, skills, and attitudes for inclusion in related subject instruction; (2) Develop and specify performance objectives; and (3) Determine standards of performance (Rice, 1982).

Developing Instructional Materials for Apprentice

Rice & Spetz (1982) collaborated that:

> each type of learning is used in instruction. Instructional materials are especially useful in related subjects instruction. They are major vehicles for presenting information, reinforcing learning, and

demonstrating the applicability of information to the apprentice's work. Preparing instructional materials is a critical training responsibility. To prepare such materials, an understanding of the characteristics of adult learners is necessary. Instruction must be designed to capitalize on the strengths of the individual learner" (1982, p. 1).

The most important skills needed in preparing instructional material for adults were to: (1) prepare written materials for apprentice students; (2) construct useful performance-related examples, problems, and practice instructions; (3) develop competency-based, criterion-referenced materials; (4) construct advanced organizers and summarizes; and (4) prepare self-instructional individualized materials (Rice & Spetz, 1982).

Presenting Information to Apprentices

Nerden & Rice (1982) related that "presenting information is one of the major responsibilities of the apprentice instructor, since it is the principal means of conveying the technical information, auxiliary information, and other pertinent information required on the job by the apprentice" (p. 1).

Some information presenting competencies needed by apprentice instructors included how to: (1) plan to present

information in the related subject experience; (2) introduce lessons and provide clear expectations and directions for apprentice activities and outcomes; (3) Vary the methods of presenting information (such as lecture, discussion, individualized instruction, role play, and others); (4) Use instructional aids; and (50 modify the instruction, based upon feedback from the class (Nerden & Rice, 1982).

Directing Learning Activities for Instruction

Rice et. al, (1982) believed that

> the skills involved in managing and directing learning activities are associated with the dynamics of learning and are closely related to the presentation of information. Directing learning activities involves creating a positive learning environment. This is a setting that can be characterized as one in which: apprentices work in productive routines without distractions; trainees and instructor share a thorough understanding of requirements and learning schedules; trainees and instructor enthusiastically undertake the learning activity; and all activities ultimately focus on the work competency of the trainee" (p. 1).

Some directing the learning activities for the instruction of apprentices included: (1) establishing a positive learning atmosphere of interest, enthusiasm,

respect, and positive interaction; (2) reinforcing apprentice learning and attitudes; (3) motivating apprentices to learn; (4) ordering lessons and activities so each builds on previous lessons;1 and (5) Organizing the class for smooth transition across time, materials, and activities (Rice et. al, 1982).

Providing for Individual Learner Needs

Spetz (1982) stated that:

> because of their different needs, interests, and abilities apprentices have different instructional requirements. Some apprentices learn faster than others. It is important that the apprentice instructor be sensitive to these differences, and these differences must be taken into account. By providing for individual needs, interests, and abilities instruction will be more responsive and more effective" (p. 1).

When providing for individual learner needs the apprenticeship instructor implemented competencies which included: the determination of needs interests, and abilities of each apprentice; (2) the development of individual apprentice related instructional plans; and (3) the utilization of the principles of individual differences in the learning process (Spetz, 1982).

Controlling the Instructional Setting

> Rice & Hughes (1982) agreed that:
> whatever the cause, the results of class disruption is the loss of valuable class time and decreased learning efficiency. As an instructor, you can encourage effective learning by managing apprentice behavior, directing activity, and orchestrating discussion. These actions on your part establish continuity of activity and clear expectations for apprentice behavior" (p. 1).

Important skills needed to control the instructional setting included: (1) establish and explain expectations and rules for behavior and maintain control in the atmosphere conducive to learning; and (2) handle disruptive behavior and conflict actively and appropriately (Rice & Hughes, 1982).

Evaluating Apprentice Performance

Rice (1982) acknowledged that each of us evaluates options before making decisions. We consider, judge, and value information. Based on our judgement-or evaluation- we make decisions and take action. As an instructor, you must evaluate apprentice performance. You must determine if apprentices are learning the necessary skills, attitudes, and knowledge to work as a competent journeyworker.

Further, you must report to the program sponsor apprentice progress in mastering this content. To perform effectively in these tasks, you must use a variety of skills associated with developing and using tests and test results).

Important skills for evaluating apprentice performance were to: (1) assess apprentice knowledge and skills; (2) Devise and use instruments to work attitudes and traits; (3) discuss individual evaluation results with apprentices; and (4) develop instrumentation to certify skills upon completion of the course (Rice, 1982).

Communicating with Apprentices

Hughes (1982) stated that "another important teaching skill, indeed one of the most important, is interpersonal relations, or interpersonal communication skills. Effective communication between instructor and apprentice is critical to the apprentice's performance in all areas of instruction" (p. 1).

Important skills for effective communication that must be learned included: (1) identifying aspects of good interpersonal communication; (2) developing attending and responding skills; (3) Developing personalizing and initiating skills; and (4) facilitating the problem-solving skills of apprentices (Hughes, 1982).

Summary

Organized labor has always been a champion of better education. Since the inception of the American union concept, one of their major goals has been the responsibility of educating members. Vocational education has always been in the forefront of this endeavor.

Historically, organized labor has been involved in education in varying degrees. Industry has attempted to control public education. However, union involvement was limited to times of sympathetic Democratic administrations. Such an opportunity came about in 1962 when The International Brotherhood of Electrical Workers (IBEW) and the Kennedy Administration's U.S. Office of Education initiated a joint training agreement to improve training in the electrical field.

Recently, during the 1980's and early 1990's, the administrations of Reagan and Bush were not at all sympathetic to the causes of organized labor. Educational gains had to be made without government assistance. During this time all education suffered from the indifference of national leadership.

Education reform has not taken the needs of vocational education into consideration, especially when it came to teacher education. This includes apprenticeship teacher preparation. Teacher education reform has been recycled

since the days of Horace Mann with little change. The same problems were addressed while the same solutions were offered as proposed in previous movements.

Apprenticeship instruction must keep up with the times as the debate on teacher preparation continues. Apprenticeship has always been the means of transition between the unskilled and the journeyman. There has never been criticism on trade content instruction. Pedagogical competencies must be taught.

There are current programs that have provided pedagogical instruction. These programs teach pedagogical competencies needed for well-rounded instructional programs and include: planning the apprenticeship program; planning related subjects; developing instructional materials; presenting information; directing learning activities for instruction; providing for individual learner needs; control instructional setting; evaluate performance; and communication with apprentices.

In summation, though organized labor has always been concerned with apprenticeship education, the political system has been often slow to show support. Because of this benign neglect, the education of apprenticeship instructors has suffered.

Teacher education reform has not included vocational education teachers, especially apprenticeship instructors,

in their attempt to revamp teacher education. However, organized labor has recognized their short-comings in teacher education, and have attempted to remedy the situation by establishing instructional programs that include learning models that emphasize instruction in pedagogical competencies.

CHAPTER III

METHODOLOGY

Research Questions

The following research questions were addressed by this study: (1) What pedagogical competencies are most needed by IBEW apprenticeship instructors? and (2) What pedagogical competencies are least needed by IBEW apprenticeship instructors?

Instrument and Related Procedures

A questionnaire was devised with the total cooperation of California State University (J. English, coordinator of graduate studies, personal communication, January, 1993) and the California Statewide Joint Apprenticeship Training Committee (JATC) Instructor Training Institute (M. Hunt, Director of training trust, personal communication, January, 1993).

The purpose of this instrument was to collect information regarding individuals' responses to the importance of 14 specific pedagogical training categories from the Performance Based Teacher Education (PBTE) (Ohio State University, 1989). Survey categories included: Program Planning Development, and Evaluation (Catagory A); Instructional Planning (Catagory B); Instructional Execution (Catagory C); Instructional Evaluation (Catagory D);

Instructional Management (Catagory E); Guidance (Category F); School-Community Relations (Catagory G); Vocational Student Organizations (Catagory H); Professional Role and Development (Catagory I); Coordination of Cooperative Education (Category J); Implementing Competency-Based Education (Category K); Serving Students with Special/Exceptional Needs (Category L); Assisting Students in Improving Their Basic Skills (Category M); and Teaching Adults (Category N). Besides the 14 general categories, 103 specific modules (Modules A-1 - N-6), or individual competencies, were surveyed as to need.

After each category there was a section for comments, where each participant had the opportunity to make optional suggestions as to category and module needs. Demographic questions were also asked concerning the sex of the apprenticeship instructor, apprenticeship year, and subjects the individual teaches. A Copy of the survey is located in Appendix B.

Population Sample and Description

All of the survey participants (N=66) were male and female journeyman union electricians, who had completed the apprenticeship program. They teach electrical apprenticeship part time at the Electrical Training Trust in Los Angeles. Each instructor teaches apprentices from one

of the four years of study, or grade levels.

Because of the accessibility of the apprenticeship instructor population, the determination was made to survey the entire group of apprenticeship instructors, rather than select a representative sample from this body. The reasons for including the complete population were mainly political. Utilization of the group's collective thoughts circumvented any potential political problems which sample selection could have caused. Selected individuals might have viewed themselves as targeted, which may have adversely impacted upon the manner in which the apprenticeship instructors responded to survey questions.

Methods and Treatment

A draft survey was prepared and administered to a sample group, which included vocational education graduate students at California State University, San Bernardino. This group was observed while taking the survey and was asked to provide input as to the design of the form and the manner in which it had been introduced and administrated. Survey questions were reviewed for appropriateness and choice of vocabulary. A general letter of endorsement from the author and the director of The Los Angeles County Electrical Training Trust, Marty L. Hunt, preceded the general distribution of the survey to the apprenticeship

instructors. A copy of this letter is located in Appendix A. A complete packet with all materials needed for the survey's completion was sent to the Training Trust. The survey was then distributed to apprenticeship instructors for completion. Mr. Hunt facilitated survey distribution, collection, and return to the author.

Models and Theory

Tuckman (1972) contended that:

> Questionnaires are used by researchers to convert into data the information directly given to a person. By providing access to what is 'inside a person's head,' these approaches make it possible to measure what a person likes or dislikes (values and preferences), and what one thinks (attitudes and beliefs (p. 480).

The procedure used for data analysis as well as for subsequent analyses, a unique quantitative methodology for finding naturally occurring groups for training priorities according to (Ross, 1982).

The theoretical framework in chapter III served as a basis for procedures and design of the study. Chapter IV will provide the reader of an overview of findings and a discussion of related data.

CHAPTER IV

FINDINGS AND DISCUSSION

Findings

Demographics

The group that participated in the survey included 9 male and 2 female apprenticeship instructors. They were divided into the apprentice year that the individual instructor taught, which included: 3 first year instructors (27.3 %); 1 second year instructos (9.1%; 3 third year instructor; and 4 fourth year instructor (see Table 1).

Table 1

Demographic information on the apprenticeship year taught by apprenticeship instructors of the IBEW Training Trust of Los Angeles, California

Value	Value	Frequency	Percent
First year	1	3	27.3
Second year	2	1	9.1
Third year	3	3	27.3
Fourth year	4	4	36.4

Category Analysis

A principle primary component extraction was performed on the responses to 14 survey questions from the 11 returned surveys. Out of the 14 categories that were analyzed 6 were determined to be the most needed and 9 were determined to be least needed. The data for all 14 categories (QUA-QUN) appear in table 2.

Table 2

Analysis of questions from 14 categories (A-N)

QUA	Program Planning and Evaluation				
Value Label		Value	Frequency	Percent	
Not Needed		1	1	9.1	
Low Priority		2	1	9.1	
Imp but not needed		3	7	63.6	
Top Priority		4	2	18.2	
	Total		11	100.0	
Mean	2.909	Std err	.251	Median	2.000
Mode	3.000	Std dev	.831	Variance	.691
Skewness	-1.087	Range	3.000	Sum	32.000

QUB Instructional Planning

Value Label	Value	Frequency	Percent
Not Needed	1	1	9.1
Low Priority	2	4	36.4
Imp but not Needed	3	2	18.2
Top Priority	4	4	36.4
Total		11	100.0

Mean	2.818	Std err	.325	Median	3.000
Mode	2.000	Std dev	1.019	Variance	1.164
Skewness	-.155	Range	3.000	Sum	31.000

QUC Instructional Execution

Value Label	Value	Frequency	Percent
Not needed	1	1	9.1
Low priority	2	1	9.1
Imp but not needed	3	3	27.3
Top priority	4	6	54.5
Total		11	100.0

Mean	3.273	Std err	.304	Median	4.000
Mode	4.000	Std dev	1.009	Variance	1.018
Skewness	-1.374	Range	3.000	Sum	36.000

QUD Instructional Evaluation

Value Label	Value	Frequency	Percent
Low priority	2	1	9.1
Imp but not needed	3	8	72.7
Top priority	4	2	18.2
	Total	11	100.0

Mean	3.019	Std err	.163	Median	3.000
Mode	3.000	Std dev	.539	Variance	.291
Skewness	.155	Range	2.000	Sum	34.000

QUE Instructional Management

Value Label	Value	Frequency	Percent
Not needed	1	2	18.2
Low priority	2	3	27.3
Imp but not needed	3	6	54.5
	Total	11	100.0

Mean	2.364	Std err	.141	Median	3.000
Mode	2.000	Std dev	.809	Variance	.655
Skewness	-.847	Range	2.000	Sum	26.000

QUF Guidance

Value Label	Value	Frequency	Percent
Not needed	1	2	18.2
Low priority	2	7	63.6
Imp but not needed	3	1	9.1

Top priority		4	1		9.1
		Total	11		100.0
Mean	2.091	Std err	.251	Median	2.000
Mode	2.000	Std dev	.831	Variance	.691
Skewness	1.087	Range	3.000	Sum	23.000

QUG School-Community Relations

Value Label	Value	Frequency	Percent
Not needed	1	4	36.4
Low priority	2	4	36.4
Imp but not needed	3	3	27.3
	Total	11	100.0

Mean	1.909	Std err	.251	Median	2.000
Mode	1.000	Std dev	.831	Variance	.691
Skewness	.190	Range	2.000	Sum	21.000

QUH Vocational Student Organizations

Value Label	Value	Frequency	Percent
Not needed	1	5	45.5
Low priority	2	4	36.4
Imp but not needed	3	2	18.2
	Total	11	100.0

Mean	1.727	Std err	.237	Median	2.000
Mode	1.000	Std dev	.786	Variance	.615
Skewness	.574	Range	2.000	Sum	19.000

QUI	Professional Role & Development				
Value Label		Value	Frequency	Percent	
Not needed		1	3	27.3	
Low priority		2	1	9.1	
Imp but not needed		3	3	27.3	
Top Priority		4	4	36.4	
		Total	11	100.0	
Mean	2.727	Std err	.384	Median	3.000
Mode	4.000	Std dev	1.272	Variance	1.618
Skewness	-1.933	Range	1.000	Sum	20.000

QUJ	Coordination of Cooperative Education				
Value Label		Value	Frequency	Percent	
Not needed		1	6	54.5	
Low priority		2	2	18.2	
Imp but not needed		3	3	27.3	
		Total	11	100.0	
Mean	1.727	Std err	.273	Median	1.000
Mode	1.000	Std dev	.905	Variance	.818
Skewness	.647	Range	2.000	Sum	19.000

QUK	Implementing CBE				
Value Label		Value	Frequency	Percent	
Not needed		1	1	9.1	
Low Priority		2	4	18.2	

Imp but not needed	3	3	27.3		
Top priority	4	3	27.3		
	Total	11	100.0		
Mean	2.990	Std err	.163	Median	2.000
Mode	2.000	Std dev	.876	Variance	.767
Skewness	.223	Range	2.000	Sum	29.000

QUL Supervising Special/Exceptional Students

Value Label	Value	Frequency	Percent		
Not needed	1	1	9.1		
Low priority	2	3	27.3		
Imp but not needed	3	6	54.6		
Top priority	4	1	9.1		
	Total	11	100.0		
Mean	2.636	Std err	.244	Median	3.000
Mode	3.00	Std dev	.809	Variance	.655
Skewness	-.538	Range	3.000	Sum	29.000

QUM Assisting Students in Basic Skills

Value Label	Value	Frequency	Percent		
Not needed	1	2	18.2		
Low priority	2	4	36.4		
Imp but not needed	3	3	27.3		
Top priority	4	2	18.2		
Mean	2.445	Std err	.312	Median	2.000

Mode	2.000	Std dev	1.036	Variance	1.073
Skewness	.147	Range	3.000	Sum	27.000

QUN Teaching Adults

Value Label	Value	Frequency	Percent
Not needed	1	2	18.2
Imp but not needed	3	6	54.6
Top priority	4	3	27.3
	Total	11	100.0

Mean	2.909	Std err	.315	Median	3.000
Mode	3.000	Std dev	1.044	Variance	1.091
Skewness	-1.074	Range	3.000	Sum	32.000

The data analysis identified the importance of individual categories. Data provided information concerning the relationship between perceived pedagogical training needs and job classification.

From the analysis of the data it was ascertained that the population suggested that there was a need for further study in 6 categories; QUA, QUB, QUC, QUD, QUK, and QUN. Subsequently, the remaining 9 categories; QUE, QUF, QUG, QUH, QUI, QUJ, QUL, and QUM were not as important. The mean score of 2.75 was the lowest point for identifying needs.

The population suggested that (Category A) Program Planning, Development and Evaluation (QUA), (Category B)

Instructional Planning (QUB), (Category C) Instructional Execution (QUC), (Category D) Instructional Evaluation (QUD), (Category K) Implementing Competency Based Education (CBE) (QUK), and (Category N) Teaching Adults (QUN) were the categories that were identified as most needed for further study. The population suggested that (Category E) Instructional Management (QUE), (Category F) Guidance (QUF), (Category G) School Community Relations (QUG), (Category H) Vocational Student Organizations (QUH), (Category I) Professional role and Development (QUI), (Category J) Coordination of Cooperative Education (QUJ), (Category L) Serving Students with Special/Exceptional Needs (QUL), and (Category M) Assisting Students in Improving Their Basic Skills (QUM) were categories that were identified as least needed for further study.

Competency Analysis

The secondary competency extraction was performed on the responses to 103 survey questions from the 11 returned surveys. Out of the 103 competencies 14 (12.58%) were determined to be needed and 89 (87.42%) were determined to be not needed. The data from all 103 competencies (QU1-QU103) appear in Table 3.

Table 3

Analysis of 103 Competencies of the PBTE

Competency Analysis

QU1 Community Survey

Value Level	Value	Frequency	Percent
Not needed	2	11	100

QU2 Advisory Committees

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU3 Goals & Objectives

Value Level	Value	Frequency	Percent
Needed	1	6	54.6
Not needed	2	5	45.5

QU4 Occupational analysis

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU5 Develop a Course of Study

Value Level	Value	Frequency	Percent
Needed	1	7	63.6
Not needed	2	4	36.4

QU6 Develop Long Range Plans

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU7 Develop Follow-up Study

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU8 Needs & Interests of Students

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU9 Student Performance Objectives

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU10 Develop Units of Instruction

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU11 Develop Lesson Plans

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU12 Select Instructional Materials

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU13 Direct Field Trips

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU14 Group Discussion

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU15 Brainstorming

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU16 Direct Students Instructing Students

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU17 Simulation Techniques

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU18 Guide Student Study

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU19 Direct Student Laboratory Experience

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU20 Problem Solving Techniques

Value Level	Value	Frequency	Percant
Needed	1	6	54.5
Not needed	2	5	45.5

QU21 Employ the Project Method

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU22 Introduce a Lesson

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU23 Oral Questioning Techniques

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	5	54.5

QU24 Provide Instruction for Slow Learners

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	8	81.8

QU25 Present an Instructional Talk

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	73.7

QU26 Demonstrate a Manipulative Skill

Value Level	Value	Frequency	Percent
Value Level	1	3	27.3
Not needed	2	8	73.7

QU27 Individualized Instruction

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU28 Establish Student Performance Criteria

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU29 Assess Student Performance Attitudes & skills

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU30 Determine Student Grades

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU31 Evaluate Instructional Effectiveness

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU32 Project Instructional Resourse Needs

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU33 Manage Budgeting & Reporting Responsibility

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	9	81.9

QU34 Arrange for Improvement in Facilities

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	9	81.9

QU35 Maintain a Filing System

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	9	81.9

QU36 Previde for Student Safety

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU37 Provide for Student First Aid Needs

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU38 Assist Students in Developing Self-discipline

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72,7

QU39 Organize & Manage the Laboratory

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU40 Control Problems of Student Chemical Use

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU41 Gather Student Data Using Formal Technique

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU42 Gather Student Data Through Personal Contact

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU43 Use Conferences to Meet Student Needs

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU44 Provide Info. on Educ. and Career Opportunities

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU45 Assist Students in Applying for Employment

Value Level	Value	Frequency	Percent
Not needed	2	11	100.0

QU46 Develop Relations Plan for Program

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU47 Give Presentation to Promote Program

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU48 Develop Brochures to Promote Program

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU49 Prepare Displays to Promote Program

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU50 Prepare News Releases & Articles

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU51 Arrange for T.V. & Radio Presentation

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU52 Conduct an Open House

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU53 Work With Members of the Community

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU54 Work With State & Local Educators

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU55 Obtain Feedback About Program

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU56 Develop a Personal Philosophy

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU57 Establish a Student Organization

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU58 Prepare Student Organization Members

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU59 Supervise Activities of Organization

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	19	90.9

QU60 Keep Up-to-date Professionally

Value level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU61 Serve Your Teaching Profession

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU62 Develop a Personal Philosophy of Education

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU63 Serve the School and Community

Value level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU64 Obtain a Suitable Teaching Position

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU65 Provide Laboratory Experience for new Teacher

Value Level	Value	Frequency	Percentage
Needed	1	5	45.5
Not needed	2	6	54.5

QU66 Plan a Student Teaching Experience

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU67 Establish Guidelines for Program

Value level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU68 Manage Attendance, Transfers, & Terminations

Value Level	Value	Frequency	Percent
Needed	1	2	19.2
Not needed	2	9	81.8

QU69 Enroll Students in Program

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU70 Secure Training Stations for Program

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU71 Place Co-op Students on the Job

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU72 Develop Training of Instructors

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU73 Coordinate on-the-job Instructors

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU74 Evaluate Students' on-the-job Performance

Value Level	Value	Frequency	Percent
Needed	1	2	18.2
Not needed	2	9	81.8

QU75 Prepare Students for Related Instruction

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU76 Supervise Employer-Employee Appreciation

Value Level	Value	Frequency	Percent
Needed	1	1	9.1
Not needed	2	10	90.9

QU77 Prepare Yourself for CBE

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not Needed	2	7	72.6

QU78 Organize Content for CBE Program

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	72.6

QU79 Organize Your Class for CBE

Value Level	Value	Frequency	Percent
Needed	1	2	27.3
Not needed	2	9	72.7

QU80 Provide Instructional Materials for CBE

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU81 Manage Daily Routines for CBE

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU82 Guide Students Through CBE

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU83 Prepare to Serve Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU84 Identify and Diagnose Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU85 Plan Instruction for Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU86 Provide Inst. Materials for Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU87 Modify Learning Environment for Exc. Students

Value Level	Value	Frequency	Percent
needed	1	4	36.4
Not needed	2	7	63.6

QU88 Promote Peer Acceptance for Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU89 Use Instructional Techniques to Meet Needs

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU90 Improve Your Communication Skills

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU91 Assess the Progress of Exceptional Students

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU92 Counsel Exceptional Student Problems

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	8	72.7

QU93 Assist Students in Achieving Reading Skills

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	72.7

QU94 Assist Students in Developing Writing Skills

Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

QU95 Assist Students in Improving Oral Comm. Skills

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU96 Assist Students in Improving Math Skills

Value Level	Value	Frequency	Percent
Needed	1	6	54.5
Not needed	2	5	45.5

QU97 Assist Students in Improving Survival Skills

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU98 Prepare to Work With Adult Learners

Value Level	Value	Frequency	Percent
Needed	1	7	63.6
Not needed	2	4	36.4

QU99 Market Adult Education Programs

Value Level	Value	Frequency	Percent
Needed	1	3	27.3
Not needed	2	7	63.6

QU100 Determine Individual Training Needs

Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU101	Plan Instruction for Adults		
Value Level	Value	Frequency	Percent
Needed	1	7	63.6
Not needed	2	4	36.4

QU102	Manage the Instructional Program		
Value Level	Value	Frequency	Percent
Needed	1	4	36.4
Not needed	2	7	63.6

QU103	Evaluate the Preformance of Adults		
Value Level	Value	Frequency	Percent
Needed	1	5	45.5
Not needed	2	6	54.5

From the analysis of the data it was ascertained that the population suggested that there was a need for further study in 14 competencies: QU3, QU5, QU10, QU11, QU12, QU19, QU20, QU29, QU31, QU60, QU75, QU90, QU96, QU98, and QU101. The remaining 89 categories: QU1, QU2, QU4, QU6-QU9, QU13-QU18, QU21-QU28, QU30, QU32-QU59, QU61-QU74, QU76-QU89, QU91-QU95, QU97, QU99, QU100, QU102, and QU103 were determined not needed for further study.

The population suggested that (A-6) Goals & Objectives (QU3), (A-8) Developing a Course of Study (QU5), (B-2)

Developing units of instruction (QU10), (B-4) Developing Lesson Plans (QU11), (B-5) Selecting Instructional Materials (QU12), (C-7) Directing Student Laboratory Experience (QU19), (D-3) Problem Solving Techniques (QU20), (D-4) Assessing Student Performance Attitudes and Skill (QU29), (D-6) Evaluating Instructional Effectiveness (QU31), (I-1) Keeping up-to-date Professionally (QU60), (M-4) Improving Communication Skills (QU90), (M-5) Assisting Students With Math Skills (QU96), (N-1) Preparing to Work With Adult Learners (QU98), and (N-4) Planning Instruction for Adults (Qu101) were the competencies that were in need of further study. The remaining 89 competencies surveyed were identified as not needed for further study.

Participant Comments

As part of the instrument the participants were encouraged to write comments concerning the survey and the concept of Performance Based Teacher Education (PBTE). The main focus of the comments was directed to the categories that dealt with pedagogy. Positive comments concerning Categories QUA-QUD, QUK, and QUN were common. The participants showed a desire to learn more in all levels of instruction, as long as it was related to their present teaching situations.

As for the remaining categories, the participants agreed that they did not apply to their present teaching situations. In fact, they believed that most of the remaining Categories dealt with administration and not to teachers, and some categories had nothing to do with the education of union apprentices. They felt that because they were not utilizing these concepts, that they were unneeded.

There seemed to be confusion concerning some of the terminology involved in the PBTE system. Many of the participants were unaware of many of the concepts and felt that they could not objectively give them a positive response.

An overwhelming comment dealt with the timing of the instrument. Most participants felt that the survey should have been distributed at the Summer of 1992 seminar or shortly after it's conclusion. Apparently, some participants felt that their responses would have been more positive if the concepts were fresh in their minds.

Discussion

A principle component analysis of the preceived in-service pedagogical needs of apprenticeship instructors from a group of 2 females and 9 males who participated in the survey was developed. Only 16.6% of all the surveys were returned to the author. This group, though miniscule in

number, provided data representative of the entire population. Regardless of the small sample, it was necessary to to analyze the data generated from the instrument. However, due to the paucity of return, it was determined to analyze the group as a whole, rather than by the apprenticeship year each instructor teaches.

The responses fron the (PBTE) primary cotegory analysis were subjected to the factor analytic technique. The process was based on a total of 14 primary factors (QUA-QUN). Value lables assigned to each category included: (1) Not needed at all; (2) A low priority; (3) Important but not necessarily needed; and (4) A top priority.

The secondary competency analysis were subjected to the factor analytic technique. The process was based on 103 secondary factors (QU1-QU103). Value lables assigned to each competency included: (1) Need instruction; and (2) No instruction needed.

Measurements used in the primiry analysis included the mean, mode, median, variance, standard deviation, standard error, range, sum, and skewness.

Keller & Warrack (1991) agreed that the mean is the best measure of central location for purposes of statistical inference, while the mode is the set of measurements that occurthe most.

Nie, Hull, Jenkins, Steinbrenner, & Bent (1975)

conferred that the variance measures how closely the individual scores on the variance cluster around the mean, while standard deviation provided a comparason of the responses in a more intuitive meaning. Skewness is a statistic needed to determine the degree to which a distribution deviates from symmetry. Therefore, these measurements aided in the determination of categories participants most and least valued for implementation into the curriculum.

Data analysis identified the importance of individual competencies. Data provided information concerning the relationship between preceived pedagogical needs and future instruction.

Besides statistical data, individual comments provided the participants with a vehicle to project feedback concerning the entire instructional process for apprenticeship education.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on research questions, union apprenticeship instructors who participated in the study, were interested in further instruction, but only when it related to their present teaching situation. Data from the study pointed to the following conclusions:

Union apprenticeship instructors were only interested in further pedagogical instruction, when it related to their current teaching situation. New concepts, perceived administration duties, and perceived unneeded concepts were rejected.

Categories that were identified included: (1) Program planning, Development, and Evaluation (Category A); (2) Instructional Planning (Category B); (3) Instructional Execution (Category C); (4) Instructional Evaluation (Category D); (5) Implementing Competency Based Education (Category K); and (6) Teaching Adults (Category N).

The preceding categories dealt with actual classroom instruction, performed by all apprenticeship instructors. None of these concepts were new to those who participated in the study. Thus, familiarity may have aided in a favorable evaluation concerning these categories.

Categories that were rejected included: (1)

Instructional Management (Category E); (2) Guidance (Category F); (3) School-community Relations (Category G); (4) Vocational Education Student Organizations (Category H); (5) Professional Roll and Development (Category I); (6) Coordination of Cooperative Education (Category J); (7) Serving Students with Special/Exceptional Needs (Category L); and (8) Assisting Students in Improving Basic Skills (Category M).

Instructional Management (Category E), Guidance (Category F), School-community Relations (Category G), Professional Roll and Development (Category I), and Coordination of Cooperative Education (Category J) were sighted as administrative duties that were accomplished by others. It should be noted that the concept of "apprenticeship" is closely related to cooperative education.

Assisting Students with Special/exceptional Needs (Category L) and Assisting Students in Improving Their Basic Skills (Category M) were categories that the population agreed had no room in their classrooms. It was possible that they had limited knowledge pertaining to these categories. It was interesting to note that the respondents agreed that they needed further instruction in the competency of Improving Student,s Math Skills (Competency M-5). There was a level of agreement, no doubt, because

Mathematics is an integral part of electrical apprenticeship instruction.

However, the category of Vocational Student Organizations (Category H) received the lowest level of acceptance.

Competency Conclusions

A very small percentage (14.58) of the 103 competencies were selected for further study. The reasons for the small number of accepted choices paralleled conclusions regarding category selection. Familiarity aided in the selection. Competencies that dealt with instruction were mainly selected. Very few new competencies were chosen, but the lack of knowledge rerarding the remaining competencies may have resulted in the low level of acceptance.

Goals and Objectives (Competency A-6), Developing a Course of Study (Competency A-8), developing Units of Instruction (Competemcy B-2), Developing Lesson Plans (Competency B-4), Selecting Instructional Materials (Competency B-5), Directing Student Laboratory Experience (Competency C-7), Evaluating Instructional Effectiveness (Competency (Competency D-6), Preparing to Work with Adult Learners (Competency N-1), and Planning Instruction for Adult Learners (Competency N-4) all deal exclusively with instruction.

The only competencies that did not involve instruction that were chosen involved Problem Solving Techniques (Competency D-3), Assessing Student Performance, Attitudes and Skills (Competency (Competency D-4), and Assisting Students with Math (Competency M-5). All competencies that were chosen would enhance the pedagogical skills of apprenticeship instructors. Hopefully, the addition of new pedagogical competencies and techniques to the curriculum will aid in strengthening an already effective program.

Recommendations

Based on the data from this study, the following recommendations concerning pedagogical competencies needed by union apprenticeship instructors are offered:

(1). Historically, organized labor has had to fight to be recognized as a force in education, and there has always been skepticism regarding formal education. When communicating with union members, it is aleays necessary to keep them informed durring the entire process.

There is a need for union apprenticeship instructors to have further instruction in pedagogical competencies at the University level. This study is a beginning, and therefore, recommend that more studies be conducted concerning the topic. Additionally, an ethnographic study should be designed to investigate attitudinal factors related to this

study. This combination of studies will help to truely understand the needs of union apprenticeship instructors.

(2). Organized labor has a unique situation- they make their own rules, thus control their own destiny. It is further recommend that there be a seminar conducted pertaining to the concept and content of competency based education. Information presented before instruction begins will reduce the anxiety levels of union apprenticeship teachers.

(3). It is recommend that the seminar format be continued with an emphasis on instruction. Unnecessary categories, such as Vocational Student Organizations (category H), Cooperative Education (Category J), School-Community Relations (Category G), Instructional Management (Category E), and Guidance (Category F) be reevaluated in terms of actual needs.

(4). It is finally recommend that union apprenticeship instructors pursue a Vocational Education Degree at regional Universities. Higher education will broaden their experience, and hopefully, narrow the gap between theory and instructional practices.

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APPENDIX A

LETTER OF ENDORCEMENT

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

The California State University

To: I.B.E.W. Apprentice Teachers

From: Paul J. Nyerick (Graduate Student; C.S.U.S.B.)

Subject: Pedagogical Competency Needs Survey

Dear teachers:

I am a graduate student in the Vocational Education Administration program at Cal. State University, San Bernardino. I am currently doing research on the perceived pedagogical competencies needed by apprenticeship instructors and would like your help in this task.

SCHOOL OF EDUCATION
714/880-5600

Last July in San Bernardino, some of you got a taste of the modular system of instruction. From the feedback I received, the concept was well received. What I would like you to do is take a few moments to complete this questionnaire and evaluate the categories of modules to see if you would like to have any of these competencies added for future instruction. This survey will help in choosing what will be taught in further workshops.

There will be a list of fourteen categories with varying numbers of modules in each. What I would like you to do is rate the categories from 1-4: (1) being not needed at all, (2) being a low priority, (3) being important, but not a necessity, and (4) being the top priority. Check the specific modules that you believe would be necessary to make the next workshop more meaningful. There also is space for comments after each category and at the end. Please feel free to be honest and candid, because all your feedback will be greatly appreciated.

When you have completed the survey, please send the document to Marty Hunt at the Electrical Training Trust; 515 S. Ave. 19, Los Angeles, Ca. 90031. Marty then will return the completed instrument to me.

Thank you for your cooperation:

Paul J. Nyerick

Martin L. Hunt

5500 University Parkway, San Bernardino, CA 92407-2397

APPENDIX B

IBEW APPRENTICESHIP INSTRUCTOR PERCEIVED NEEDS SURVEY

I.B.E.W. APPRENTICESHIP INSTRUCTOR PERCEIVED NEEDS SURVEY

Rank the following categories from 1-4 on the right. Check the modules that you believe will be needed for further instruction. Make appropriate comments under module listings and at the end.

CATEGORY **RANKING**

A. Program Planning and Evaluation _____ 1 2 3 4

Modules: Community Survey_____
Advisory Committees_____
Goals and Objectives_____
Occupational Analysis_____
Develop a Course of Study_____
Develop Long Range Plans_____
Develop Follow-up Study_____

Comments: _____

_____

Instructional Planning_____ 1 2 3 4

Modules: Needs and Interests of Students_____
Student Performance Objectives_____
Develop Units of Instruction_____
Develop Lesson Plans_____
Select Instructional Materials_____

Comments: _____

_____

C. Instructional Execution _____ 1 2 3 4

Modules: Direct Field Trips_____
Group Discussion_____ Brainstorming_____
Direct Students Instructing Other Students_____
Simulation Techniques_____
Guide Student Study_____
Direct Student Laboratory Experience_____
Problem solving techniques_____
Employ the Project Method_____
Introduce a lesson_____
Oral Questioning Techniques_____
Provide Instruction for Slow Learners_____
Present an instructional talk_____
Demonstrate a Manipulative Skill_____
Individualized Instruction_____

Comments: _____

_____

D. Instructional Evaluation_____ 1 2 3 4

Modules: Establish Student Performance Criteria_____
Assess Student Performance Attitudes and Skills_____
Determine Student Grades_____
Evaluate Your Instructional Effectiveness_____

Comments: _____

_____

E. Instructional Management _____ 1 2 3 4

Modules: Project Instructional Recourse Needs____
Manage Budgeting and Reporting Responsibilities____
Arrange for Improvement of Facilities____
Maintain a Filing System____
Provide for Student Safety____
Provide for the First Aid Needs of Students____
Assist Students in Developing Self-discipline____
Organize and Manage the Laboratory____
Control Problems of Student Chemical Use____

Comments: _____

_____

F. Guidance _____ 1 2 3 4

Modules: Gather Student Data Using Formal Data-collection Techniques____
Gather Student Data Using Personal Contact____
Use Conferences to Meet Student Needs____
Provide Information on Educational and Career Opportunities____
Assist Students in Applying for Employment or Further Education____

Comments _____

_____

G. School-community Relations _____ 1 2 3 4

Modules: Develop a School-Community Relations Plan for Your Program____
Give Presentations to Promote Your Program____
Develop Brochures to Promote Your Program____
Prepare Displays to Promote Your Program____
Prepare News Releases and Articles____
Arrange for Television and Radio Presentations Concerning Your Program____
Conduct an Open House____
Work With Members of the Community____
Work with State and Local Educators____
Obtain Feedback About Your Program____

Comments: _____

_____

H. Vocational Student Organizations _____ 1 2 3 4

Modules: Develop a Personal Philosophy Concerning Vocational Student Organizations____
Establish a Vocational Student Organization____
Prepare Vocational Student Organization Members for Leadership Roles____
Supervise Activities of the Vocational Student Organization____

Comments: _____

I. Professional Role and Development 1 2 3 4

Modules: Keep UP-to-date Professionally____
Serve Your Teaching Profession____
Develop a Personal Philosophy of Education____
Serve the School and Community____
Obtain a Suitable Teaching Position____
Provide Laboratory Experience for New Teachers____
Plan a Student Teaching Experience____

Comments:

J. Coordination of Cooperative Education 1 2 3 4

Modules: Establish Guidelines for Your Cooperative Vocational Program____
Manage; the Attendance , Transfers, and Termination of Co-op Students____
Enroll Students in Your Co-op Program____
Secure Training Stations for Your Co-op Program____
Place Co-op Students on the Job____
Develop the Training of On-the job Instructors____
Coordinate On-the-job Instructors____
Evaluate Co-op Students' On-the-job Performance____
Prepare Students for Related Instruction____
Supervise Employer-Employee Appreciation Event____

Comments:

K. Implementing Competency-Based Education (CBE) 1 2 3 4

Modules: Prepare Yourself for CBE____
Organize the Content for the CBE Program____
Organize Your Class and Lab to Install CBE____
Provide Instructional Materials for CBE____
Manage the Daily Routines for Your CBE Program____
Guide Your Students Through the CBE Program____

Comments:

L. Serving Students With Special/Exceptional Needs 1 2 3 4

Modules: Prepare to Serve Exceptional Students____
Identify and Diagnose Exceptional Students____
Plan Instruction for Exceptional Students____
Provide Appropriate Instructional Materials for Exceptional Students____
Modify the Learning Environment for Exceptional Students____
Promote Peer Acceptance for Exceptional Students____
Use Instructional Techniques to Meet the Needs of Exceptional Students____
Improve Your Communication Skills____
Assess the Progress of Exceptional Students____
Counsel Exceptional Students With Personal Problems____

Comments:

M. Assisting Students in Improving Their Basic Skills____ 1 2 3 4

Modules: Assist Students in Achieving Basic and Technical Reading Skills____
Assist Students in Developing Writing Skills_____
Assist Students in Improving Their Oral Communication Skills____
Assist Students in Improving Their Math Skills____
Assist Students in Improving Their Survival Skills____

Comments: _____

N. Teaching Adults: _____ 1 2 3 4

Modules: Prepare to Work With Adult Learners____
Market the Adult Education Program____
Determine Individual Training Needs____
Plan Instruction for Adults____
Manage the Instructional Process____
Evaluate the Performance of Adults____

Comments: _____

General Comments and Specific Needs Not Covered Above: _____

Instructor's name _____

Year and Subjects You Teach _____

Remember,if you have any questions please contact me, Paul Nyerick, at Box 655 Cedar Glen Ca. 92321.
Thank you again for your cooperation. Every little bit will help.